CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

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FIG. 18. *Crassula hemisphaerica,* Thunb. Nat. size. J. R. Brown photo.

CACTUS AND SUCCULENT JOURNAL

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Vol. XIII APRIL, 1941 No. 4

PRESIDENT'S MESSAGE

At a recent meeting of the Executive Committee, the affiliation of the Cactus Club of Eagle Rock, California, was approved and this active group of women of the Twentieth Century Woman's Club is now added to the already large group of affiliated organizations. Fellowships were voted to: Vice President Ervin Strong; Editor Scott E. Haselton; writer Frank Mark; Regional Vice Presidents Chas. R. Cole of Cincinnati and William Pleumer of Plainfield, N .J.; writer and organizer Dr. G. L. D'Aston of Field Museum, Chicago; and John E. C. Rodgers of Sheffield Lake, Ohio.

Next month we will publish complete details of the plans for the Convention next July 4 and 5 at the Missouri Botanical Gardens at St. Louis, but at this time we can state that the plans include many types of meetings to attract the advanced student, the beginner and the commercial dealers. It is our desire that all our members attend this Convention whether they are the appointed delegates of their local clubs or not.

For those who are just becoming interested in cacti and other succulents there will be exhibits of prize photographs of succulent plants and their flowers. There will be a growers' exhibit of succulent plants, cactus bowls and arrangements and interesting talks on the culture and care of plants.

For the advanced students there will be lectures by leading botanists and cactus authorities on nomenclature, ecology, evolution, and kindred subjects.

For dealers there will be special exhibits by the larger growers of material suitable for bowl work and demonstrations of the effective use of succulent plants in bowl work and plant arrangements and meetings with other dealers to discuss the problems peculiar to their business.

For all who attend, there will be luncheons, moving pictures, sight-seeing trips and a public banquet at a leading hotel.

Tickets for the Saturday sight seeing trip, the luncheon at the Seiloff Nursery and the banquet, will be sold for $3.50. Reservations should be made at the earliest moment for these tickets by writing the Chairman, Ervin Strong, 315 W. Erna St., La Habra, Calif. The luncheon given by the Missouri Botanical Gardens on Friday will be free to all of our members and delegates.

We extend a cordial invitation to all organizations not affiliated with the Society to send delegates to the Convention and such delegates will be cordially welcomed and given every opportunity to participate in the discussions and join in the social activities of the Convention.

The time grows shorter for entries in the Photographic Show and we urge that all members file their entries soon. The photographs received so far show exceptional merit but many more entries are needed to make the show a success.

W. T. MARSHALL, *President.*

PHOTOGRAPHIC EXHIBIT

There remain only 30 days in which to enter your photographs for the exhibit in St. Louis. Please reread page 30 of the February JOURNAL, then send your photographs promptly. Look up your desert and garden negatives and have a print made according to specifications. Please do it now so that we can publish a catalog of the exhibits in time for the National Convention. Your cooperation is earnestly solicited.

THOR METHVEN BOCK
8148 Mannix Drive, Hollywood, Calif.

"STRANGE FACTS"

It is not generally known that ranchmen in certain areas of our Southwestern states make use of, what is generally considered, useless plants.

The tall stems or trunks of soapweed, (*Yucca elata* and similar species), and the succulent-like bulbs of Sotol, (*Dasylirion Wheeleri*), have been used quite extensively with considerable success as cattle feed.

They are prepared by first burning off the dead leaves, after which they are cut and shredded by special machines. The result is a very appetizing bovine salad which may be either taken straight or garnished with a bit of cottonseed meal. According to a New Mexico agricultural bulletin which says, in part, "it is evident that cows may be maintained on either *Yucca elata* or Sotol heads without other feed, through long periods of drouth."

F. R. MARK.

CACTUS AND SUCCULENT JOURNAL TEN YEAR INDEX

Your back issues will be more usable if you have this 10-year cumulative index of 20,000 references. Mr. E. M. Baxter devoted a year's spare time to compiling this work. Most of the known plants are listed, as well as the names of people who have made cactus history these last ten years. Bound in cloth, 60 pages $1.50 postpaid. Box 101, Pasadena, Calif.

Please number the cuts in your last JOURNAL as follows: pg. 33, Fig. 14; pg. 34, Fig. 15; pg. 35, Fig. 16; pg. 41, Fig. 17.

HELPFUL ADVICE!

G. A. Frick sends in the following as a remedy for sow bugs: "Keep fewer cats, that kill the birds, that eat the sow bugs." Perhaps some other member has a helpful remedy. Write to California Spray-Chemical Corp., Richmond, Calif., for a copy of "The Plant Doctor's Garden Spray Guide."

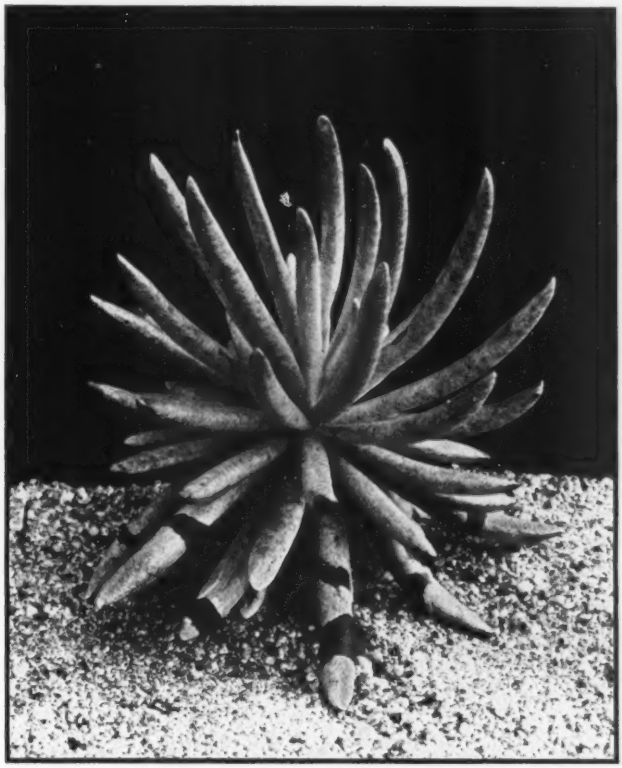

FIG. 19. *Senecio scaposus* DC.

Two Senecios

By J. R. BROWN

Senecio scaposus DC. Prodr. VI. 403; Harv. in Fl. Cap. III (1865) 406.

Stem shrubby, fleshy, either very short or elongate and branched. Leaves crowded at apex of the stems or branches, fleshy, broadly linear, very obtuse, terete, often flattened near the tip and subspathulate, the younger cobwebbed, the older glabrous.

Peduncle scapelike, nude or sparsely scaly, many times longer than the leaves, cobwebbed, one or several headed, the pedicels elongate; involucre cobwebbed, scarcely calycled of 10-12 scales; disc flowers very many, rays about 12.

The above description is that given by Harvey, except for the minute details of the floral parts which are omitted here. In the notes accompanying this, he states "Wild specimens generally stemless or with very short stems: Leaves 2-3 inches (5-7.5 cm.) long, 2-3 lines (4-6 mm.) in diam. Peduncle 1-1½ feet (30-46 cm.) high, occasionally 1 headed, more frequently with 3-5 long pedicelled heads."

Senecio scaposus is fairly well known, as it is frequently found in collections of succulent plants. Its chief attraction is due to the rosette of terete leaves with their white, felt-like covering. In descripions of this plant which have been seen, the older leaves are described as green, owing to the shedding of the felty covering with age. Green leaves, however, are seldom seen here, sometimes in the less sunny weather of winter this covering may be ruptured on older leaves and expose parts of the green leaf, (this may be seen in the photo. of *Senecio scaposus*)

but seldom, if ever, is an entirely green leaf observed, as, before this happens the older leaves shrivel up, and even this only occurs on plants grown under glass. In plants growing in the open this rupturing of the leaf covering has never been observed and it may be possible that in a state of nature the leaves retain this covering intact and that the green leaves may be caused by cultivation in colder, damper and less sunny environment.

The plant shown in the photo. has a short stem 6 cm. in length, formed during a period of 10 years' growth, and plants of this age may have 2 or 3 branches.

The leaves vary in length from 5-15 cm., those on young vigorously growing plants being the longest. In older plants the grayish-white felt-like covering of the leaves becomes tinged with yellow here and there. The withered leaves remain attached, clothing the stems.

Senecio scaposus seems to flower very seldom in cultivation under glass, at least in Southern California, but it flowers freely when grown outdoors. The peduncle may bear 9 long pedicelled heads, the heads have an outer row of ligulate florets and the color is bright green.

In the recent book entitled *Succulents for the Amateur,* it is stated, in error, that *Senecio* has no ray petals. The ligulate ray florets and the styles of the disc florets with truncated branches are the chief distinctions between *Senecio,* L. and *Kleinia,* L. *Kleinia* having the style branches tipped with a small cone and ligulate ray florets are absent.

Senecio scaposus, DC. var. **caulescens,** Harv. l.c. *Senecio calamifolius,* Hook. in Bot. Mag. t. 4011.

The leaves of this plant are described by Hooker as follows, "the apex flat, or, as it were, scooped out on one side and more or less dilated, so as to be almost spoon-shaped: the whole is clothed with a cobwebby, compact substance, lying close to the surface."

The plant shown in the photo. seems to agree very well with the plant described and figured by Hooker. The inflorescence of this plant is very similar to that of *S. scaposus,* DC. The stem growth seems to be about twice as fast as in *S. scaposus,* DC. and is more branching. The length of the leaves, the number in a rosette, the felt-like covering and the color are approximately the same, differing only in the shape.

Jacobsen, in his book entitled *Succulent Plants,* mentions *Senecio vestita,* Bgr. This is undoubtedly the same plant as shown here, as the brief description agrees with it and this plant was also received under this name by the writer.

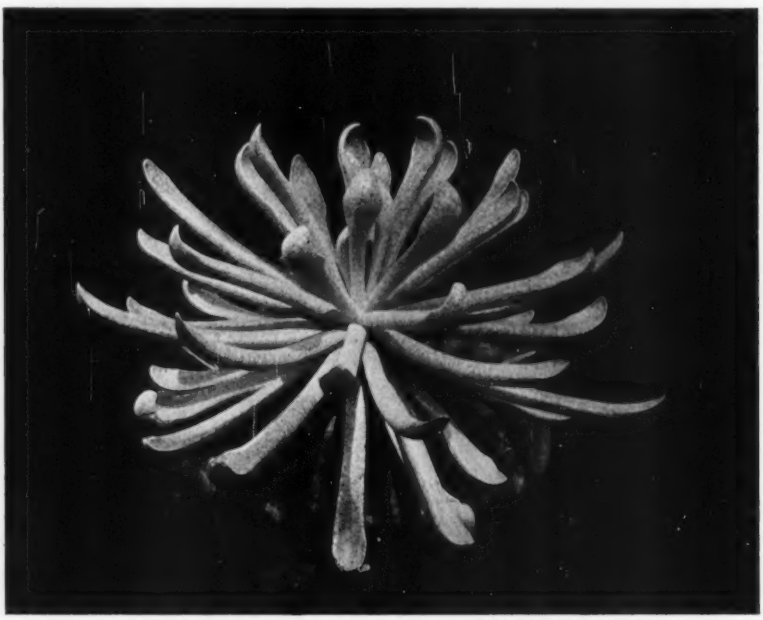

FIG. 20. *Senecio scaposus* DC. var. *caulescens,* Harv.

However, *Senecio vestitus* was described by Bergius, Plantae Capensis, 1767, and is an entirely different plant of slight interest to succulent fanciers. The remarkably shaped leaves in conjunction with the covering and color, create a plant of great interest.

The illustrations show a plant of *Senecio scaposus* DC. approximately x 0.6; flowers, nat. size; a face view of two leaves, *Senecio scaposus* DC. left, *Senecio scaposus* DC. var. *caulescens*, Harv. right, and a plant of *Senecio scaposus* DC. var. *caulescens*, Harv. approximately x 0.5.

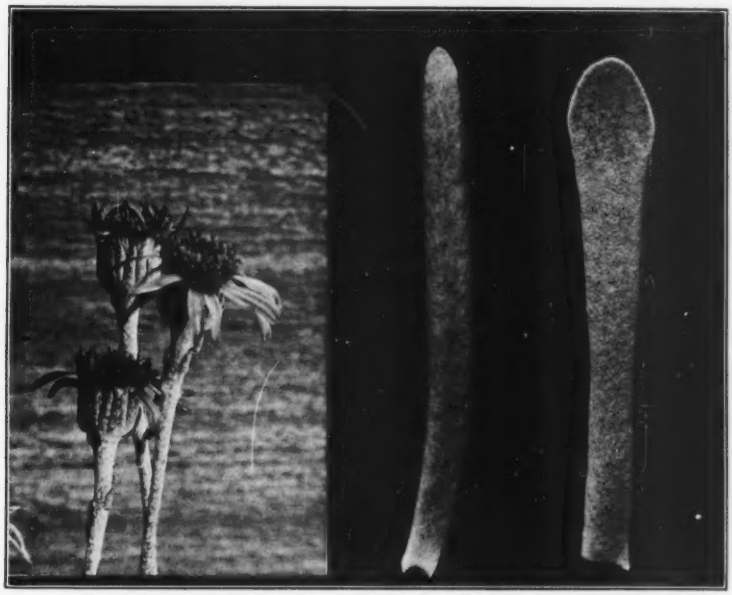

FIG. 21. Flowers of *Senecio scaposus* DC. and leaves of two *Senecios*.

NOTES FROM THE OAKLAND CACTUS AND OTHER SUCCULENT LEAGUE

The League's April meeting was held Tuesday, April 1, at the Andrews' home on 5161 Trask Street, Oakland, with 29 members and visitors present. Semi-final preparations for our display in the Oakland Flower Show were made and it was decided to hold a special meeting on Tuesday, April 15, for further preparations. Members were warned to place their own name as well as the plant's name on each specimen to be used in the show. Fifty dollars was made available to the working committee for incidental expenses.

The speaker of the evening was Mr. Sidney Parsons, Honorary President and one of the founders of the League. The subject "How and Where to Get Cacti" was well presented, Mr. Parsons' vast knowledge of the cacti and the cacti country being backed by years in the field. The trip which the members took with him from Tucson, Arizona, led to Nogales, Mexico, and all points south. Vivid descriptions of the various species seen and the topography of the country as we progressed south were presented to the members. The many laudatory remarks of those present was proof of the quality of the talk and the gratitude of the club to Mr. Parsons.

The members had each brought a few plants to exhibit and they were asked to identify their plants and add comments on growth, etc. The meeting was then adjourned and refreshments were served.

The speaker for our next meeting will be from the California Chemical Spray Company and he will talk on sprays and their effects on plants.

PAUL HUTCHISON, *Acting Secretary.*

We are pleased to announce the election of our president, Wilfred Andrews, to the honor of fellow in the Cactus and Succulent Society of America in view of his innumerable services to the club. As a founder and charter member and as an officer his ceaseless work has proved an important factor in the success of our club today. As chairman of our Exhibit Committee, he was largely responsible for the success of our exhibits on Treasure Island and in the past Oakland Garden Shows. To you, Wilfred Andrews, our whole hearted congratulations and best wishes for your continued interest in cactology. *The League.*

Society member Charles M. Fitzpatrick announces the change in name of his nursery to *The Cactus Gardens*, 700 S. Closner Blvd., Edinburg, Texas. (Visitors welcome.) This concern offers a set of 20 postcards of Cacti of the Southwest in brilliant colors for 25c postpaid. These postcards are interesting for their common names and as habitat illustrations.

How I Started Collecting Cacti in a Tropical Country

Five years ago I started collecting cacti in this city of Havana, where apparently, nobody with whom I was acquainted, was aware of the importance and interesting features of the most fascinating family in botany.

I was suffering from depression, when one afternoon a very dear friend of mine came to pay me a visit, holding in her hands a specimen of *Opuntia brasiliensis* and one cutting of *Euphorbia splendens*. She said, "Start collecting. With your love for plants, you will find new interest in these odd ones," I had to make an effort to regain my will power and cheerfulness in life, so I promised her I would start a collection.

I never realized when I made the intention to devote myself to the Cactus family here in Cuba, five years ago, the difficulties and hard work that awaited me. Surely, it was no easy job to collect cacti.

My first step was to find out where the cacti were and how to get them, not having the least idea that I could obtain good specimens in this country. Other friends presented me with a few more cacti, among them a large cutting of *Nopalea dejecta* and a crest of *Euphorbia lactea*. These two aroused my enthusiasm and caused a wound in one of my fingers that had to be operated on by the doctor.

In those first days of hard labor, I went to a nearby beach collecting *Opuntia dillenii* and two species of *Agave*. I suffered a serious accident in one of my eyes that required the attention of my oculist. I was already struck with the collecting passion, Cactusitis as Dr. Houghton calls the disease, and nothing kept me from inquiring and searching with the ambition of enlarging the quantity of my plants. Everywhere I went I asked for the spiny varieties. It seemed that before then nobody had paid attention to them, not even the scientific people around me.

One happy day an old man in my country place brought me from afar one cut of *Selenicereus grandiflorus*, which in a few days opened a beautiful, scented flower. This fragrance brought back the memory of a night blooming flower I had known in my childhood, and which I recognize now as an *Hylocereus trigonus*. The sentiment connected with it has conquered me so completely as to make me a worshiper of the mysterious plants of this western hemisphere.

My friends who called themselves collectors did not know the names, their native place, nor anything related to cacti. They had brought them from New York, Mexico and Europe and explained to me there were a lot of different ones. This news aroused my curiosity as I desired to know more about the interesting plants.

I started looking up in the dictionaries and encyclopedias, for my books on botany said very little about CACTACEAE. At least they did not satisfy my desire to learn. I wrote for information to the Editors of *House and Garden*, as I am an old subscriber of this interesting magazine. I received a prompt answer with the address of Dr. Houghton, to whom I sent a letter with all my inquiries. His reply was the remittance of his book on cacti and a demand for *Pereskia cubensis*. Just when I was ready to comply with his request I learned about his death. I also wrote to the government printing office in Washington and I received from them *Cacti* by David Griffith. I wrote to France, Italy, England, Germany, etc.

I visited our Botanical Garden, almost in ruins, after the ravages of a terrible hurricane. There I met an old gardener who was the first person to mention Dr. Britton. He was his good friend and he was sure he knew all about cacti in Cuba and alsewhere, but there was no reference to *The Cactaceae*.

He showed me succulents that were given to the garden by Dr. Britton and that had escaped the disaster. Of course, I increased my collection with cuttings of everything he had when he knew I was the daughter of a Cuban writer whom he greatly admired.

By that time, at the end of the year 1934, I had about 20 different succulents altogether. Every one meant an unusual amount of energy. I owe to my son, who has been a pupil of La Salle School, the good advice to address myself to his teacher of botany, Brother Leon. I cannot explain in words in such a brief account what Brother Leon has signified to me in my study and research of cacti. His enormous knowledge, his kindness and generosity in giving his precious time to an ignorant lover of plants like me is greatly appreciated. He opened wide for me the doors to a world of dreams which I could never have imagined. It has been a real pleasure to go out in the fields to collect plants with this wonderful Brother Leon, who is familiar with every herb. He makes you feel with his sweet, lofty and at the same time plain words, the immensity of God and the loveliness of Nature. He was a close friend of Dr. Britton and Dr. Rose, with whom he discovered different species during their research work in Cuba for *The Cactaceae*. One of them was *Leptocereus Leonii*, found in Sierra de Anape.

With his valuable help I have been able to group in my small garden all the varieties of Cuban cacti mentioned in *The Cactaceae* and other new species that are under observation. I have obtained these plants after long and hard trips to all parts of the Island, in which difficulties I have also had the valuable cooperation of young Jose Carabia, whom I converted into a enthusiastic cactologist. He has become a devoted pupil of Brother Leon and is our most successful field collector. He has already published a monograph on Cuban cacti.

In my first visit to Brother Leon, all my problems and darkness were solved and cleared up as he advised me to go to the Library of our University to look and read over the pages of the wonderful work published by the Carnegie Institution, *The Cactaceae* by Britton and Rose. I was perfectly amazed by the great number of varieties and the importance of this valuable work. One day Brother Leon presented me with an old copy of the *Cactus and Succulent Journal*. I became a member of the Society and became acquainted with the general movement. With the assistance of the good friends I made, like Dr. Poindexter, Mr. Gates, Dr. Lowry, Isabel Wright, and Mr. Marshall, I could treasure the beauty and diversity of the foreign cacti from different parts of America.

I started my plants in pots but they became so numerous, that after the advice and detailed instruction of Dr. Lowry and members of the Society regarding location, soil, etc., I transplanted them to the open. My entangled garden was a living proof of how cacti develop in a tropical country in a period of a little over 2 years. All the plants, with the exception of the

FIG. 22. The first Flower Show in the city of Havana awarded the first prize to the collection of Cuban cacti, arranged by Mrs. Lanier. This exhibit was composed of the thirty-seven species described by Britton & Rose in *The Cactaceae,* besides one lately described by Knuth.

The plants were in generic groups allowing the public to notice quickly the distinct characteristics. In the center was a large *Dendrocereus nudiflorus* Engel. The following step contained a *Pereskia cubensis* B. & R., showing bright red flowers and underneath there was a display of *Rhipsalis cassutha* Gaert.; these two plants attracted great attention and many doubted if they had the right to belong to the CACTACEAE.

In the group were seven *Leptocereus* and four *Harrisias, three Cephalocereus, Opuntias, Selenicereus, Hylocereus,* group of *Mammillarias, Coryphanthas* and four attractive *Melocacti.*

This exposition would not have fulfilled its instructive scope had it not been for Mrs. Gimenez Lanier, whose plan it was of placing a large map of Cuba in the background above the potted plants; different colored threads connected each plant to its native habitat on the map.

Cuban varieties, have been started from small cuts and plants received from California, Texas and Mexico. I have lost a great number of plants due to lack of experience and the right attention. Just now I am prepared to start my collection over again in the proper way, because practice and study have taught me to judge what most of the plants require. I need a glass house to protect some of the species during our rainy season and damp atmosphere.

The Harvard Garden at the Sugar Plantation, Soledad, in Cruces, Cuba, is working and preparing a wonderful cactus garden. The professors in charge of the interesting work are doing a marvelous job. In a few years this tropical garden will undoubtedly be a paradise for cactus fanciers, if only the plants will be taken care of.

Reading over the pages of *The Cactus and Succulent Journal* from the first issue, I find all questions have been answered and that it has the best information regarding every problem. The scientific articles, as well as the plain contributions, are responsible for the success that we despairing amateurs have obtained with our plants.

EMMA C. DE GIMENEZ LANIER.

Senor Carabia has recently written a monograph "La Familia Cactaceas en Cuba," published in the memoirs of the Cuban Society of Natural History which is one

of the most complete treatments of a group of cactus yet brought to my attention.

The monograph is written in Spanish, comprises 14 pages and is under 9 headings. A preamble traces probable evolution of the family and describes the various divisions into which it is divided for convenience.

A chapter on Cultivation gives proper conditions of soil, moisture and sun for each of the Cuban species, and the next chapter considers all known insects and diseases known in Cuba and their remedies. This is followed by a chapter on the uses and properties of cacti.

The history of botanic studies of cactus in Cuba is followed by a complete listing of all Cuban species in chronological order with a chapter of comments on various species.

Herbariums and Botanic Gardens interested in Cuban cacti are listed and a Bibliography completes the monograph.

We will follow with great interest the future work of this promising young botanist who is a pupil of Brother Leon, President of the College of De la Salle in Havana. W. T. M.

NEW CATALOGS

R. W. Kelly, 2410 La Rosa Dr., Temple City, California, has just issued his 1941 Price List of 36 pages. The cover contains 78 pictures of succulents in color while 50 cacti and the other succulents are pictured within the list of approximately 1000 items. This catalogue is issued free with a purchase of a 25c packet of cactus seeds.

FIG. 23. LEFT: A row of the pure white-spined *Cleistocactus Strausii*, with the exception of the third plant down to approximately the center of the picture, which is the old type of *C. Strausii* in the trade. Under glass this plant is also white, but when placed in the open sun the spines change from dirty white to yellow, brown and sometimes reddish. The pure white form will attain a diameter of twice to three times that of the old form. Under glass especially, the hair is silky and fine and without heavy spines. In European greenhouses this form has been raised and by perpetuation of characters by selection they have in a comparatively few short years created a select strain that will reproduce itself about 90% from seed.

RIGHT: Crest at top of picture, *Morawetzia doelziana* which is one of the newest genera, and in the crested form, is one of the rarest crests in cultivation. Left, pure white form of *Cleistocactus Strausii* crest. Center graft directly below *Morawetzia doelziana* is *Chilenia atrospina* one of the rarer new Chilean species quite recently described. The taller graft is the normal form of *Oreocereus hendricksenianus*. The attractive Opuntias in the foreground is the attractive harmless type with tufts of white glochids.

As a proof that Hummel's enjoy collecting new and interesting things for themselves, they have set aside a plot 40 by 40 ft. for their Sunday recreation and where eastern visitors will be able to see more mature plants at close range and will have an opportunity to photograph and study these plants.

The following 8 pages are next to the last installment of the Monograph "Colorado Cacti" by Dr. C. H. Boissevain and Miss Carol Davidson.

EFFECTS OF DRUGS AND X-RAYS ON PLANTS

Colchicine and Chromosomes

A new aid to speeding up mutations in plants has been discovered in colchicine, a poisonous drug extracted from the seeds of the autumn crocus or meadow saffron (*Colchicum autumnale*). No longer does the experimenter have to wait on the vagaries of wild nature; he treats his seeds or seedlings with colchicine and so confuses the chromosomes of the cells that they increase in number and this results, among other things, in increasing the size of the plants, in making sterile hybrids fertile, making it possible to cross species that ordinarily will not cross, and producing a large number of variations. With these facts in mind the grower is able to produce larger flowers, better fruits, and improve plants generally. While all this will greatly interest the plant grower, it is likely to have some effect on the eminent scientist who has been wont to give high sounding names and double authorizations to each insignificant form that originates in nature. Now that many wild forms can be duplicated by man, the so-called varieties and forms assume a new insignificance. Hitherto the scientist has looked with a jaundiced eye on the multitudinous varieties of peonies, irises, roses, gladioluses and other cultivated plants, but now that they may be shown to be quite equal in origin to the great number of color forms or leaf-forms in wild plants—the albas, roseas, lilacinas, incisas, villosas, etc. —he will have to take account of them or disregard similar small variations in nature; unless, indeed, he quickly makes a rule that if you find it in the wild it is a good variety, but if it appears in cultivation it is a mere creation of the gardener, and to be thrown out at once. —*The American Botanist.*

COLCHICINE AND THE PRODUCTION OF THE NEW VARIETIES OF PLANTS

From *Revista de Agricultura, Industria y Comercio*

By Mabel L. Ruttle*

Recent advances in plant science, which have widespread practical importance have come through a knowledge of the use of certain chemical and physical means. Thus the plant growth substances promote in cuttings more rapid development of roots and are useful in the induction of parthenogenetic development of seeds, X-rays and ultraviolet rays produce specifically different changes in the chromosomes, and colchicine produces a doubling of the chromosome number in dividing cells.

Colchicine is the alkaloid obtained from the bulbs and seeds of the autumn crocus, *Colchicum autumnale*. It has frequently been used both in recent and more ancient times as a remedy for gout. In 1934 Dustin and Lits in Belgium studied the action of this drug on cancer cells. In 1937 Havas in Belgium showed that in plants it produced cells with more than the normal number of chromosomes. In the same year, in America, Blakeslee and Eigsti, and Nebel and Ruttle found that if seeds or seedlings were treated with the drug polyploid plants were produced in a large percentage of cases.

Since the discovery of the action of colchicine in 1937, polyploidy in numerous genera has been produced in various laboratories throughout the United States and other countries. This drug has been successfully applied in the production of new varieties of temperate zone plants at the New York Agricultural Experiment Station, Geneva, N. Y., and at Sao Paulo, Brazil. Through arrangements made by the director of the Mayagüez station it was possible to undertake work at that experiment station on colchicine treatment of several species of tropical plants. This work, which was done in collaboration with a number of interested investigators on the staff of the Puerto Rico station, corroborated in the main that done on herbaceous plants at the New York station.

All plants are made up of cells, little boxes of plant substance packed closely together. Each cell originates by division from a previous cell. The plant substance in each cell consists of a denser central body, the nucleus, embedded in a jell-like substance, the cytoplasm. The main constituents of the nucleus are the chromosomes which are the bearers of the hereditary units, the genes.

Colchicine is a specific intracellular poison which inhibits the separation of half chromosomes during cell division. Thus although the chromosomes divide in a normal manner the halves do not separate, the cell does not divide, and a new cell is formed with twice the number of chromosomes in the former cell. Such a cell may continue to live and divide. All cells formed from it have the doubled chromosome number and are called tetraploid cells.

The ordinary methods of inducing tetraploidy embody treatment of the seeds or young seedlings with a 0.1- to 0.15-per cent aqueous or a 0.5-per cent alcoholic solution of colchicine for periods varying from one to several hours, depending on the susceptibility and penetrability of the plant to the drug. Application of the drug in lanolin, in agar, and by spraying have all been shown to be effective in certain cases.

Induction of tetraploids by treating with colchicine is comparatively simple and sure in herbaceous plants of many genera, provided they have not already reached the natural limits of polyploidy. The initial stunting following treatment is soon outgrown. The tetraploid cells survive, and plants develop that are entirely diploid, tetraploid in varying proportions, or almost completely tetraploid. Selection of tetraploids may require microscopic examination of pollen grains or even chromosome counts.

In many plants of horticultural value treatment of seed or seedlings is impracticable either by reason of the lack of seedlings as in Vanilla, the variability of the seedlings as in many heterozygous plants propagated by clones, or the long time required for the seedlings to develop as in many tree fruits. Induction of tetraploidy in developing axillary buds is highly desirable in such plants but appears somewhat more difficult to attain.

If tetraploid cells are produced by treatment with colchicine in the growing point of a young plant, they may give rise to branches which are tetraploid or partially so. From the tetraploid areas tetraploid flowers arise which if self-fertilized will produce tetraploid seed and in turn tetraploid plants. Thus the new type of plant is immediately established. Because the tetraploid areas are often interspersed with diploid areas even within the same flower the main difficulty in selection of tetraploids for setting seed lies in the selection of flowers which are entirely tetraploid.

Tetraploid plants may be markedly different from the diploid parent stock, or they may be so similar in general appearance that they can be selected only by microscopic examination. Cells in tetraploids tend to be larger than in corresponding diploids, hence measurements of the size of pollen grains, stomates, and cell nuclei are useful criteria for selection of tetra-

*Visiting specialist at the Puerto Rico Experiment Station of the U. S. Department of Agriculture, Mayagüez, Puerto Rico.

ploids. In certain cases chromosome counts will be necessary especially in the selection of plants for breeding purposes.

Tetraploids are often sturdier than their parents, the flowers may be larger, the corollas more ruffled, the foliage thicker. Tetraploids of fertile plants are usually less fertile than the parents; tetraploids or sterile hybrids are more fertile. From the fertile tetraploid hybrid backcrosses can be made which were not previously possible.

The physiology of the plant is considerably changed by the increase in chromosome number. Hence quantity and quality of essential oil content, time of flowering, yield of starch or rotenone, hardiness, and disease resistance may be altered.

The tetraploid of a sterile mint hybrid is fertile and bears abundant seed. The same is true of the tetraploid ordinarily sterile "spearmint." The tetraploids in each case are vigorous and have a different odor from the corresponding diploid.

The production of tetraploid plants by means of colchicine realizes a long cherished dream of cytogeneticists. They have long wanted to produce fertility in sterile hybrids, to back-cross such fertile hybrids to the parents, to test the direct effects of polyploidy, to make tetraploids both for themselves and where they are meritorious for the triploids which may be obtained from the back-cross to the diploid parents. All these goals and more can now be attained. In addition, the action of X-rays* on the polyploids may be more adventageous than on diploids. Thus for a period the plant breeder enters an unexplored realm of new varieties, the geneticist of investigation of inheritance in polyploid series, the physiologist of new physiological relationships to environment as hardiness, the plant pathologist of changed relations to disease, and the chemist of changed quality and quantity in essential oils, vitamins, and textile strength.

*EDITOR'S NOTE: See *Cactus Book*—Houghton, pg. 32. The above article will also interest those who are developing crests by the use of colchicine.

EFFECTS OF RESEARCH

Scientific research, then, is one among many social activities carried on by the peoples of our culture. Like all such processes, it is carried on by men who learn in childhood languages ill or unsuited to close thinking; by men who wish to eat, make love, to win approval as well as to know; by men who are reared in an environment of emotional likes and dislikes; by men who become so absorbed in their technical tasks that they have little energy to criticize the non-scientific parts of their make-up. And these scientific men form a tiny fraction of their communities. So far as they succeed in emancipating themselves from the misconceptions and prejudices prevailing in their social groups, they become by virtue of their partial emancipation queer creatures whose judgment most people mistrust outside of their specialties. Both the temperament that inclined them to research and the habits they form in research tend to make them awkward, ineffective, and reluctant in appealing to the emotions that are so potent in influencing men.—*Dr. Wesley C. Mitchell, Retiring President of the A. A. A. S., in Science.*

MEALY BUGS AND SCALE

Here in Des Moines, Iowa, I use the following spray on my cacti indoors with excellent results: One teaspoonful of "Red Arrow" with a little soap suds to a gallon of water. R. E. PETERS.

Xerophyte Gardens have moved to their new location at 500 Auditorium Blvd., Dayton Beach, Florida. They welcome visitors.

SO. CALIF. CACTUS EXCHANGE BULLETIN

Did any of you ever try to grow cactus with the root end up? I think I hear some of you remark, "What a silly question." Such things have happened. Unintentionally I tried it myself. Last fall I secured some cuttings to be used for grafting stock. These were cut in about twelve inch lengths and laid up to dry before rooting. About a month later I set them out in the garden where I wanted them to grow. A few days ago I was cultivating around these plants and noticed one with a couple of offshoots on it. This caused me to examine the rest of the plants and much to my surprise, I found three of them with roots on the top of them. These roots were about the diameter of a match stick and about one inch long, and the end was pointed down as though they were making an effort to get to the ground. All of these plants were slightly larger in diameter at the ground than at the top, so I naturally supposed the right end was in the ground. The next thing was to prove which was the top of each of these plants. I turned to a top cutting which was planted right end up and began to examine the spine clusters for some clue. I noticed the center spine of each cluster pointed downward at an angle of about forty-five degrees, and upon examining the three with roots on the top I found that the center spine pointed upward, thus proving that the plants were standing on their heads. I think they will survive this abuse and as they are now right end up they will do their best to show appreciation for being that way. I have learned something more about cactus. The next time I plant cuttings I will examine them more carefully and probably learn something more.

THE UNIVERSITY OF STELLENBOSCH

Stellenbosch, S. Africa

"I have been away from here during September and October last for another trip through Namaqualand and the Richtersveld. It was a fine time and I did my very best to gather as many plants as possible. The flowers have been marvelous this time and people in Namaqualand think that there has not been such a flowering season as last year for at least the last 40 years. As far as I know the country from former visits this may be right. So I was very glad to have my 'Leica' and quite a good many films of the Agfa Color and also Kodachrome ones with me. I have made more than 1000 colored photographs and most of them turned out very fine and excellent. No wonder, if one knows our strong sun and light and the beautiful colors. Of course I made also hundreds of succulent photographs, too, as I had the 'Leica' always with me, even on the highest mountains we climbed. So I could do all I wanted to do and have now the most excellent lantern slides about Namaqualand one could imagine. It is probably the best collection of this region in our country. Happily one can also make black and white prints of the colored films and so one can use the lot also in this manner. As far as the plants are concerned, I was lucky to find a new Lithops, a new Conophytum and many other new plants. I think the trip has paid very well, and I am glad to have made it. As the flower fields of Namaqualand are at least as interesting to see as the Kruger Game Reserve, there ought to be much more advertising work in this direction when there is again a good season, for generally, there are only about two or three flower seasons during 10 years and not always first class ones.

"By the way, there are no restrictions here about sending out seeds of our succulent plants. Only with the plants themselves there are quite a lot of restrictions, as e.g. no *Euph. obesa,* no *Lithops,* no *Gibbaeum,* none of the finest of the *Pleiospilos* may be sent away.

H. HERRE.

NEW ALOES

H. Basil Christian has described six new species of Aloe from central and east tropical Africa. Descriptions of the following were published in the October, 1940, issue of *The Journal of South African Botany:*

A. Milne-Redheadii

A. Duckeri

A. morogoroensis

A. floramaculata

A. mwanzana

A. Mawii

The same issue of the *African Journal* contained an obituary of Dr. Schönland who contributed so much to the knowledge of South African succulents.

SOUTHWEST CACTUS GROWERS

Wednesday, March 12th, was "Trading Night" at the regular weekly meeting of the Southwest Cactus Growers. A discussion of the Succulents of Sequoia National Park took up most of the evening.

Wednesday, March 19th, was our regular monthly pot-luck supper with Mr. Mace Taylor as guest speaker. After discussing Stapelias and desert trips, he showed colored pictures of the last Rose Parade.

Wednesday, March 26th, Mr. Frank Mark showed a fine display of variegated plants.

Sunday, March 30th, a garden tour to Mrs. Hutchison's near Azusa was enjoyed.

Wednesday, April 2nd, was our regular monthly "Business Meeting" after which there were talks on plants.

Sunday, April 6th, the "Growers" took a trip to Dr. Robert T. Craig's in Baldwin Park.

E. S. TAYLOR, *Chairman Publicity Committee.*

MEXICO VISITORS

Cactophiles should see Society Member Ferdinand Schmoll, Tasquillo, Hidalgo, when they visit Mexico. "Take the Laredo-Mexico Highway to Tasquillo which is about 178 kilometers, take the left hand road and after 150 to 200 meters lies our place. We shall put some signs on the road to show the way clearly. Tasquillo is a nice Mexican place with good climate, about 1700 meters high, (nearly like Cuernavaca) with warm Thermal baths and many trees. There is a hotel and some boarding houses for people who want to stay some time, and we hope to see many American tourists here in the richest cactus country."

T. I. Carter and Sons, Route 38, Tewksbury, Mass., have just published their Retail Catalog No. 2. This 24 page catalog is outstanding because it pictures plants the exact size that buyers may expect. It must be discouraging for an amateur to order from a beautiful illustration of full grown cactus and then receive a minute seedling. The more progressive retailers will state the sizes of plants offered for sale. Mr. Carter gives the common name, the scientific name, and the habitat of all listings. There are 50 well printed illustrations.

CHECK LIST

Cactus Journal—1 year	$ 3.00
California Cactus—Baxter	1.00
The Stapelieae (3 volumes)—White and Sloane	12.50
The Cactus Book—Houghton	2.25
Cactus—Borg	6.50
Cacti for the Amateur—Paper $1.00; Cloth	2.00
Succulents for the Amateur- Paper $1.50; Cloth	2.00
Pronouncing Glossary—Marshall, Woods	3.85
Arizona Cacti—new edition	1.00

Postpaid in U. S. A. Foreign add 20c per volume
Box 101, Pasadena, Calif.

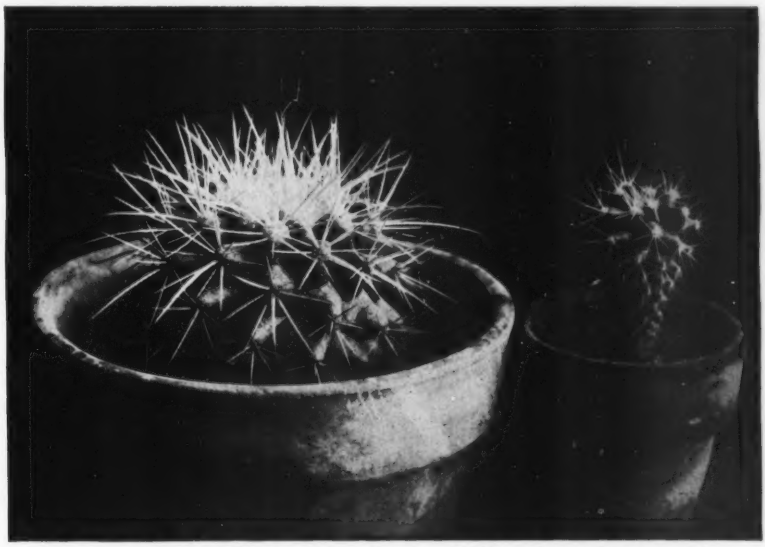

FIG. 24. THREE YEAR OLD SEEDLINGS OF *ECHINOCACTUS GRUSONII*
The plant in the larger pot has been out of doors for two years; the other, equally healthy, has been kept indoors beside a south or east window. This shows how cacti respond to fresh air. Taken at Azusa, California, by R. S. Woods.

A COLORFUL CACTUS COLLECTION

There are many phases of collecting cacti. Some collectors prefer to have as many species of cacti as can be obtained, while others prefer to collect only certain types, such as *Cereus, Echinocereus, Mammillaria, Ferocactus,* and *Opuntia,* while some desire to collect the rarer and smaller types, as *Ariocarpus, Parodia, Rebutia,* and *Astrophytum.* Then there are others who collect the spineless varieties of cacti: *Epiphyllum, Zygocactus, Schlumbergia* and *Rhipsalis.*

In a colorful collection, there may be shades of red, pink, yellow, cream, purple, blue, violet, green, brown, orange, and white. In selecting cacti having red or reddish appearance, there are a number of the Mammillarias to choose from, among these: *Martinezi, crassipina, Rhodantha* var. *rubra* and others. In *Gymnocalycium* there is *Mihanovichii* with its odd tapestry of maroon and dark green body. There is the beautiful *Ferocactus acanthodes* with its curved red spines, highly colored after a rain, or heavy dew. *Ferocactus coloratus* from Baja California has dark-red, broad spines, also *F. nobiles* and *gracilis,* not forgetting the Arizona *Echinocactus polycephalus*—a many-headed variety with red spines; this species is also found in California.

Among the Opuntias are *macrocentra,* a Texas variety with reddish-tinged branches and very long brownish-red spines two to five inches in length, tipped with a paler color. Another Texas variety is *O. rufida* without spines, but is covered with hundreds of fine red glochids. Then there is the colorful *Thelocactus bicolor* with its purplish-red spines, intermingled with white, giving the plant a beautiful appearance. The so-called Rainbows of the southwest, *Echinocereus rigidissimus* with its colorful bands of red, rose and terra cotta toning down to pink and white. *Echinocereus Reichenbachii* is also one of a colorful species. Another colorful Echinocereus is *viridiflorus* with its reddish spines should not be forgotten.

Cacti of yellow tones are more than a few, ranging in shades of a golden yellow to cream. In this group one will have a large number to select from. Here we have the beautiful Golden Barrel or *Echinocactus Grusonii* from Mexico. This plant is a beauty even when small, but a large specimen exposed to the full sunshine appears like a golden ball with golden spines.

Another fine golden-spined variety is *Notocactus Leninghausii* from Brazil. Then there are two beautiful Parodias, *P. chrysacanthion* and *P. aurispina* with golden spines; the flowers of the former are a bright yellow while the latter are an orange-yellow. These two species are native to South America and will blossom very freely.

Among the Cereus, there are a number that can be selected. Here we have *Pachycereus Pringlei* with nice yellow spines, at least in its first few years of growth as a seedling. Then there is *Cephalocereus chrysostele,* often called the Golden Club, and *Cephalocereus chrysacanthus,* another beauty. *Bergerocactus Emoryii* is very spiny and of a peculiar shade of yellow-green when young, becoming dingy in age; this cactus planted in a brass container, gives a harmonious effect.

One of the Astrophytums, *ornatum* var. *Mirbellii* with its beautiful speckled body, is arrayed with bright yellow spines. A number of Mammillarias should be admitted to this collection. *M. elongata,* with its several varieties: *stella-aurata, Schmolli, tenuis* (often called the Golden Stars) are beautiful specimens usually growing in clusters. From the West Indies we get the lovely *M. nivosa,* which is a rare and handsome cactus. Many other Mammillarias might be included. *Ferocactus glaucescens,* a blue-colored plant with long curved spines of brightest yellow, is a very lovely combination. *F. melocactiformis* and *F. Rosteii* has long amber-colored spines and has yellow colored spines that are curved in various directions.

In the Opuntias, of the Cholla type, there are quite a number of yellow spined varieties. *Opuntia clavellina* has long branches or joints, bearing very long, sharp, golden yellow sheathed spines. A more slender variety is *congesta* from Sonora, Mexico, which has very long golden yellow spines covered with paper-like sheaths; these two species are seldom seen in collections. *Opuntia burrageana* from Baja California, bears shorter but bright yellow spines and is indeed attractive.

O. Bigelovii, the golden-spined cholla, found in California and Arizona, is a very dangerous and wicked one and is called the Jumping Cactus. In fact this cactus is a mean one to come in contact with. I remember trying to break off a joint from one of these chollas; first, I took a piece of wood to break it off with, but it clung too tightly; then I tried my foot to pry it off and the thing stuck to my shoe with the spines penetrating through the leather into my foot. The next job of removing this wicked cactus (I then gave it the name Devil Cactus) was a problem. Finally I managed to remove the vicious thing, but then it clung to my finger tips as if alive. It surely was alive and I was alive with pain, also. Then I got a newspaper to wrap it up. My fingers were bleeding and wrapping the cholla in the newspaper was unpleasant. No matter how I wrapped, and how much paper went around the specimen, the spines would penetrate through. Finally I succeeded and laid it aside. This handsome yet vicious cholla is also known as the Teddy Bear Cactus.

Another yellow-spined variety is *Opuntia Davisii* found in New Mexico and Texas.

Of the pad types, or *platyopuntias,* there are many. *Opuntia microdasys* (the Kid Glove cactus) is always a favorite but very treacherous with its minute glochids. Woe to the collector who gets his or her hands full of those glochids.

Opuntia Scheeri is another interesting specimen almost covered with yellow hair-like spines. *O. monacantha variegata,* with its unusual marbled mosaic of color and design, has large blotches of a paler greenish yellow, intermingled with darker green. The minute pink leaves project from the areoles of the pads. The marbled pads of this Opuntia are very attractive and it is one of the best sellers (commonly called the Marble Cactus). The flowers are an orange-yellow, and the plant is a native of Brazil.

Then there are a few purple varieties such as *Cereus aethiops* from Argentina and Brazil, having stems of an unusual purple shade, studded with black spines. *Echinocereus chloranthus* has many purplish spines. In the genus *Echinocereus* one will find a large number having purple flowers.

Opuntia santa-rita from Arizona and *O. basilaris* from California have pads that change to a purplish color during various seasons of the year. *Mammillaria microhelia,* a Mexican variety, has fine purplish spines and is a beautiful novelty. *Ferocactus rectispinus* is very rare; its body is a bluish-purple shade and its long, reddish spines are quite a contrast. This rare cactus is found in Lower California.

Of the blue and violet shades, there is *Myrtillocactus geometrizans* with its beautiful blue stems with black spines. *Cereus hexagonus, glaucus,* and *peruvianus,* and *Cephalocereus Palmeri,* have beautiful blue stems. The stately, blue columns of *Cephalocereus purpureus,* with its purple spines will be a pride to any collection.

In *Myrtillocactus tamaulipensis* we have a very fine blue-violet specimen, a very rare plant and little known in collections.

Then there is *Ferocactus glaucescens* having a lovely blue body covered with yellow spines. Among the *Gymnocalyciums* there are the bluish-colored species, *G. denudatum* and the greenish-blue *G. Saglionis. Leuchtenbergia principis,* that appears more like an Agave than a Cactus, has long, finger-like tubercles of a bluish-green color, from which arise several long papery spines 2 to 4 inches in length; it is rare and comes from Mexico.

In the green-colored cactus one must refer more to the body coloration of the plant itself than to the spines. The colors in green range from very dark to the paler shades. A few of the dark colors will be considered first. The Mexican *Pachycereus marginatus* has green branches and is often called the Organ Cactus; it is used as a hedge in Mexico. A number of Mammillarias of the darker green are *M. nigra,* M. tetracantha, M. kewensis, M. hemisphaerica* and others.

Of the paler shade of greens we have *Orya peruviana, Ferocactus uncinatus* and *Opuntia brasiliensis.* Those of the olive green shades are *Astrophytum asterias, Lophophora Williamsii, Echinocactus horizonthalonius* and *Mammillaria Winteriana*.* A remarkable cactus is *Lemaireocereus Beneckei* from Mexico. It forms an attractive column of which the growing top is of a delightful sea-green color, some parts of it having the appearance of being powdered. In the various Rebutias there are a number of fine shades of green.

Echinopsis calochlora, found in Brazil, has a distinct different color unlike any of the other species of this group; it is vivid yellow-green. A number of Echinopsis are a very dark green while some are of paler shades. Another interesting specimen is *Echinocactus grandis* with its deep purple bands on a bluish green body—very outstanding and attractive.

The brown shades are found in some species such as *Lobivia tamatimensis;* the body of this plant as well as the spines have a distinct brown color. Then *Echinofossulocactus vaupelianus* has beautiful, long, chocolate-brown spines, while *E. albatus* has spines of a beautiful light brown or tan.

Now that the collector has somewhat become acquainted with a large number of colored varieties, we shall see what can be found among the white "colored" varieties. Here we will have a large number to select from.

First, one of the best is *Cephalocereus senilis,* the "Old Man Cactus;" this fine cactus should find first place in every collection. It's a beautiful plant, with its long white hair, giving the plant a venerable appearance. No collection is complete without it, as it is the most wanted plant of all and a pride in any collection. Even very small specimens of this cactus are clothed with fine tresses of white hair. It is a native to Mexico.

Another fine plant is *Cephalocereus Dybowskii* from Brazil with its tall branches hidden by white cobwebby hairs. *Cephalocereus Hoppenstedtii* has long, wispy, white spines and *Cleistocactus Strausii* has soft, white-spined, candle-like columns.

Espostoa lanata is completely covered with snowy wool; it is a rare cactus that grows high up in the Peruvian Andes and a novelty in any collection of rare plants.

Then there are the Mammillarias: *M. bahniana* with its fine white hairs covering the entire plant (often called the Old Woman Cactus); *M. pulmosa,* where spines seem to be turned into beautiful, soft, white feathers; the densely snow-white spined *M. candida* appears more like a soft ball or snowball than a cactus; and *M. Bocasana,* so soft appearing and white that it has been dubbed the Powder Puff; *M. crucigera, M. guelzowiana, M. klessingiana, M. Tiegeliana*, M. Dietrichii** and *M. Occidentalis* are all beautiful white Mammillarias native to Mexico.

Then among other species such as the *Notocactus scopa,* and the glossy and snow white *Parodia nivosa,* we have very choice specimens. Little *Epithelantha micromeris* and tiny *Pelecyphora valdeziana* and *P. aselliformis* should not be overlooked.

Among the *Astrophytum myriostigma* one usually comes across some specimens that are quite white—the small, white tufts of a woolly appearance being very close together. This cactus is known as the Bishop's Cap. These plants appear more like stones than plants. It should find third place in every collection.

Another interesting cactus is *Wilcoxia senilis,* commonly called the Lamb's Tail; it is usually grafted on another cactus as it is rather difficult to grow on its own roots in cultivation.

In forming a collection of white-spined cacti one should add *Opuntia invicta;* this rare plant is rather bulky in appearance, stems or joints are short and thick, spines are long and wide, white in color; it is rare in collections, often called the Rat's Nest Cactus and is found in Baja California. Another Opuntia known as the Silver Cholla is a very showy plant called *O. echinocarpa.*

Then of the pad varieties, *Opuntia erinacea* has very long hairs and is commonly called the Grizzly Bear Cactus. It is an odd and attractive cactus and placed among the hairy types adds another novelty. Another beautiful white-spined cactus is *Echinocereus De Laetii* with white hair.

Coming to the end of this list of colorful cactus, a few rare and odd specimens can be added. *Melocactus intortus* with its melon-shaped body crowned with a wonderful cephalium, or cap, is indeed a rare specimen in collections. There are a number of other Melocacti that are very attractive. These rare plants are found in the West Indies.

Cereus formosus monstrosus and *C. peruvianus monstrosus* and a few others of this type of cactus have a curious growth of knobs rather than ribs. Another odd appearing plant is *Lophocereus Schottii* var. *Gatesii* which is a monstrous plant called the Totem Pole; a very rare form from Baja California

There are the beautiful Epiphyllums with their gorgeous large blossoms. These cacti are often called the Orchid Cactus. The Night-blooming Cereus such as *Selenicereus grandiflorus, S. pteranthus* and *S. hamatus* have beautiful white flowers, some are as large as a dinner plate. The Selenicereus are slender climbers and have nocturnal flowers. *Hylocereus undatus* is another beautiful night-flowering cactus with many golden stamens. These Cereus are native in the tropics.

Nyctocereus serpentinus is a very tall climber, also one of the night-flowering cacti and should find a place in a collection. It is a very fast grower and flowers are beautiful and very fragrant. It does well both indoors and out in the garden. It comes from Mexico. *Aporocactus flagelliformis,* with its long pendent-like tails, is a different type called Rat Tail Cactus. The flowers are of a fine cerise color and it usually comes in blossom about April or May. *Zygocactus truncatus* is another common but fine flowering cactus that usually is covered with beautiful blossoms during the Christmas season.

It is almost impossible to have the entire number of cacti in one collection, but from this list of colorful ones, any collector could make a selection of a few, and thereby establish a colorful group.

CLARENCE L. SCHMUTZLER, Watertown, Wisconsin.

*EDITOR'S NOTE: The above article shows considerable study and the plant names seem accurate. There are a few names which are unknown to us, yet it shows how unrecorded names can come into general use. The list is also of value to one interested in a general collection and he will find most of the best known plants listen herein.

A VOICE FROM THE DIM PAST

By LEON CROIZAT, *Arnold Arboretum,*
Harvard University, Jamaica Plain, Mass.

Perish the thought that the amateur of succulents and the botanist who is interested in these plants are not always and at all cost the very best of collaborators and friends. Perish the thought that the botanist may be rude or carping in speaking his mind about certain "names," and that the amateur may be less than receptive to the dictates of science. Let us lift our cup to the health and progress and achievements of horticulture and botany.

Truth is a powerful master, nevertheless. I shudder at the thought that sometimes, somewhere there have been squabbles between lovers of succulents and botanists, and I feel contrite ere I speak up. But speak up I must. Here is what I have found in an old book, Haworth's *Observations on the Genus Mesembryanthemum,* published in London in the fateful year 1794. I quote pp. 26 and 27, ending with p. 28, as follows:

"But not disheartened by a few difficulties, I again went to Hammersmith in June last; and thought myself exceedingly lucky to find Mr. Lee (senior) in the ground; of whom (after introducing myself to him as a general Botanist;) I requested the favour of being permitted to view his MESEMBRYANTHEMA, adding, that I was particularly attached to that tribe of plants; and by way of compliment, told him, I had heard much both of the rarity, and numbers of the sorts he cultivated.

After desiring me to stay while he went to, and returned from, the house, he showed me the plants, and by way of trying my strength, I suppose, asked me the names of a great many more sorts than he condescended to tell me the names of.

I took the liberty of endeavoring to set him right in the names of one or two of the MESEMBRYANTHEMA, described by Linnaeus in Species Plantarum; (particularly the M. glomeratum,) at which he was evidently chagrined; and affected to smile at the idea of *my* attempting to teach *him* the names of a set of plants he said he had been accustomed to consider himself familiar with from his youth. I endeavored to explain matters, but my remonstrance was not attended to. The chagrin I thus innocently occasioned, was the foundation to the incivility he showed me when I went to Hammersmith again in August, with an intention of examining some of the sorts; which I have not to this day seen the flowers of, and am most doubtful about, and which I knew he would have in bloom about that time, from having observed them preparing for it when I was there in June.

I went in August I say, to Hammersmith again; a third and last time, and thought myself particularly fortunate in finding Mr. Lee (senior) again walking about the nursery; I addressed him in the cheerful language of politeness and civility, and again solicited permission to look at his plants; when, remembering the little respect I had already appeared to pay to one or two of his names of Mesembryanthema, he answered me, by uttering something like the word *well,* in a tone of voice almost as unintelligible as it was unwelcoming; and immediately walked on along the path he was in; and then turned off to the left, to a man at work; to whom I very naturally conjectured he was giving instructions, and from whom I as naturally supposed, he would either return to me; send a man to show me the plants, or a message permitting me to see them alone; or otherwise a denial to view them at all; which last indeed, I did by implication, tacitly receive; for he neither returned to me himself, nor sent a message, but suffered me to wander about the principal Walk which leads to the Turnpike, until I was tired of waiting; after which (saturated with disappointment and affront) I came away, without being permitted to look at a single thing I wished to see; but not, without forming *two* resolutions; ONE, to record the behaviour which occasioned my perplexity, THE OTHER, to return to the scene of it no more. But to drop this unpleasing digression."

Thus we have a record. We do not know what new species of *Mesembryanthemum* were to be seen in Mr. Lee, Sr.'s collection at Hammersmith in 1794. We do know that, upon being addressed "with the cheerful language of politeness and civility" by Adrian Hardy Haworth, the much hurt Mr. Lee, Sr. uttered "something like the word *well.*"

O tempora! a mores!

On page 190, Vol. XII, of the Cactus and Succulent Journal of the Cactus and Succulent Society of America, an article with a caption, "Cactus Deserts of the Southwest, as told to W. Taylor Marshall by F. Radley" is somewhat misleading relative to cacti in south Texas. *Acanthocereus pentagonus* is not abundant in the vicinity of Rio Hondo. It is abundant south of the Arroyo Colorado, in the region near the Coast on the higher ground. It is in no danger of extermination as the land in which it is most abundant is non-agricultural land. It prefers a sandy loam clay soil; however, it will do well in most any kind of well drained clay soil.

Coryphantha Muehlenpfordtii does not occur in the Lower Rio Grande Valley. It certainly does not grow in Cameron County. It is a West Texas species.

ROBERT RUNYON, Brownsville, Texas.

EDITOR'S NOTE: We appreciate the above information from one who knows Texas. We hope that Mr. Runyon will give us a cactus story from his years of experience with cacti.

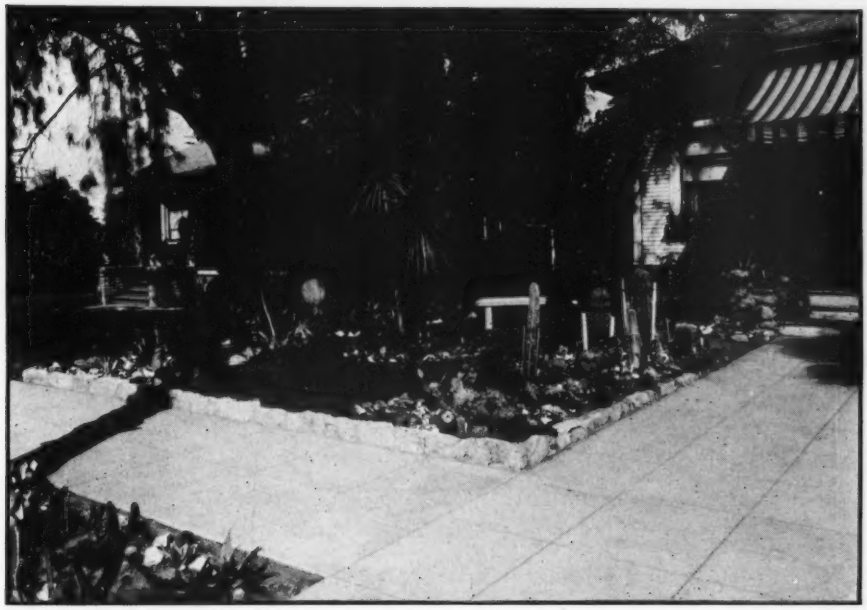

FIG. 25. This partial shade planting in Pomona, California, should suggest a summer arrangement for your plants. Plunge the pots and protect the cacti from sunburn until they have become acclimated. Give your plants air and sun and note the results.

FROM NAPA, CALIF.

I thought you might like to hear of the way Echinopsis have performed in northern California.

Greatly to my surprise six hundred odd plants have made better progress here than they did in Southern California. This is due to my better understanding of them and, I think, to the fact of somewhat colder winters. There is no doubt that the reversion to the conditions under which they originally grew in the Andes, or a reasonable facsimile, have had an effect on the size they have attained and the number of blooms on single plants.

Last year when my older plants were a little over four years old I had as many as thirty-two flowers on a single plant and this year I have buds ready to open now on plants but eight months from very small "pups." I use a mixture of one-third sandy loam, one-third leaf loam and the other third well-rotted cow manure. This was the ratio suggested by my good friend, and your ardent booster, F. A. Bridges of Wilmar.

I guess it is the history of everyone who has been bitten by the cactus bug that he will look for other fields to conquer as he gets to understand one family. I have now about fifteen types of Harrisia planted in a lath house covered with "celoglass" and lath on the top and lath and muslin on the sides. One plant of *H. Martinii* is now fifteen feet tall and but two and a half years from cutting. Last year it had one bloom and this year there are about a dozen buds all set to bloom. *H. bonplandii* is over twelve feet tall, had one bloom last year but no buds set yet this year. In the center of the round house I have a rough oak log. On this I have climbing *Selenicereus vagans* and several Epiphyllums. The former has sent out tentacles and are clinging to the bark. This may be quite a sight when they start blooming.

I have a fine specimen of *Notocactus scopa* which has set six buds. My *Parodia Maasii* and *Opuntia glomerata* have done very well up here. I started five different *Rebutia* on an old *Opuntia* last fall as an experiment at the same time I rooted some of the same size "pups." The grafted ones are three times the size of those rooted and *Ceph. senilis* and *R. minuscula* have bloomed already.

Let me say in closing that the JOURNAL is worth its weight in gold to me and I hope that those to whom I recommend it are as appreciative of the benefits from it as I.

GLENN A. SHAVER.

FORMATION OF CRESTS

"The Enigma of the Origin of Monstrosity and Cristation in Succulent Plants" with 14 illustrations by J. J. Verbeek Wolthuys, Published in Haarlem, Holland. Text in Dutch with an English translation by J. A. Schuurman on alternate pages.

An excellent treatise on the few known facts of fasciation with particular stress on the theory of heridity in fasciation. Like most works on this most interesting subject it is indeterminate because there is so little absolute knowledge of the cause and repetition of this peculiar phenomenon. It, however, collates the known facts and presents them in a most interesting manner. W. T. M.
